What is claimed is:

1. An optical recording medium, including a reflective layer and a recording layer, and constructed in a manner that a recording mark is formed on the recording layer by irradiating a laser beam so as to record information,

the recording layer being continuously formed in a relative moving direction to the laser beam with plural virtual recording cells, each of which has an arbitrary unit length and a unit width perpendicular to the unit length in the relative moving direction,

five stages or more irradiation times being set with respect to the virtual recording cell so that the irradiation time becomes long successively from the first to final stages,

a power average value of laser beam in a specific irradiation time of the plural-stage irradiation times being set so as to become larger than a power average value of another irradiation time longer than the specific irradiation time, and

recording marks being formed in the virtual recording cell and giving five stages or more different optical reflectance to the virtual recording cell when the laser beam is irradiated to the virtual recording cell.

2. The optical recording medium according to claim 1, wherein in the plural irradiation times from the first stage to at least second stage, a power average value of laser beam of each stage is set so as to become longer than a power average value of another irradiation time longer than the plural irradiation times.

3. The optical recording medium according to claim 1, wherein in at least first stage irradiation time, the power of laser beam is set larger than a reference power until the midway time point from the irradiation start time point, and is set to the reference power until the termination time from the midway time point, and

in another irradiation time longer than the irradiation time, the power of laser beam is set to the reference power until the termination time from the irradiation start time point.

4. The optical recording medium according to claim 2, wherein in at least first stage irradiation time, the power of laser beam is set larger than a reference power until the midway time point from the irradiation start time point, and is set to the reference power until the termination time from the midway time point, and

in another irradiation time longer than the irradiation time, the power of laser beam is set to the reference power until the termination time from the irradiation start time point.

5. The optical recording medium according to claim 1, wherein in at least first stage irradiation time, the power of laser beam is set larger than a reference power until the termination time point from the irradiation start time point, and

in another irradiation time longer than the irradiation time, the power of laser beam is set to the reference power until the termination time from the irradiation start time point.

6. The optical recording medium according to claim 2, wherein in at least first stage irradiation time, the power of laser

beam is set larger than a reference power until the termination time point from the irradiation start time point, and

in another irradiation time longer than the irradiation time, the power of laser beam is set to the reference power until the termination time from the irradiation start time point.

7. The optical recording medium according to claim 1, wherein the recording layer contains an organic dye.

8. An optical recording medium, including a reflective layer and a recording layer, and constructed in a manner that a recording mark is formed on the recording layer by irradiating a laser beam so as to record information,

the recording layer being continuously formed in a relative moving direction to the laser beam with plural virtual recording cells, each of which has an arbitrary unit length and a unit width perpendicular to the unit length in the relative moving direction,

five stages or more irradiation times being set with respect to the virtual recording cell so that the irradiation time becomes long successively from the first to final stages,

a reference time shorter than the final stage irradiation being set,

the laser beam being irradiated in all range at a power larger than a reference power in an irradiation time shorter than the reference time of the plural stage irradiation times, and being irradiated at a power larger than a reference power in an irradiation time longer than the reference time until the reference time elapsed from the irradiation start time point,

and further, being irradiated at the reference power after the reference time elapsed,

when the laser beam irradiation time is short, the irradiation time at the reference power after the reference time elapsed decreasing so that a ratio of the irradiation time at the larger power increases, and thereby, a power average value of the laser beam becoming large so that recording mark having five stages or more different and giving five stages or more different optical reflectance to the virtual recording cell.

9. The optical recording medium according to claim 7, wherein the recording layer contains an organic dye.

10. An optical recording method, which irradiates an laser beam to an optical recording medium including a reflective layer and a recording layer, and forms a recording mark is formed on the recording layer so as to record information, comprising the following stages of:

continuously forming plural virtual recording cells, each of which has an arbitrary unit length and a unit width perpendicular to the unit length in a relative moving direction to the laser beam, in the relative moving direction, with respect to the recording layer;

setting five stages or more irradiation times with respect to the virtual recording cell so that the irradiation time becomes long successively from the first to final stages;

setting a power average value of laser beam in a specific irradiation time of the plural-stage irradiation times so as to become larger than a power average value of another irradiation

time longer than the specific irradiation time; and

forming recording marks being formed in the virtual recording cell and giving five stages or more different optical reflectance to the virtual recording cell when the laser beam is irradiated to the virtual recording cell.

11. The optical recording method according to claim 10, wherein in the plural irradiation times from the first stage to at least second stage, a power average value of laser beam of each stage is set so as to become longer than a power average value of another irradiation time longer than the plural irradiation times.

12. The optical recording method according to claim 10, wherein in at least first stage irradiation time, the power of laser beam is set larger than a reference power until the midway time point from the irradiation start time point, and is set to the reference power until the termination time from the midway time point, and

in another irradiation time longer than the irradiation time, the power of laser beam is set to the reference power until the termination time from the irradiation start time point.

13. The optical recording method according to claim 10, wherein in at least first stage irradiation time, the power of laser beam is set larger than a reference power until the termination time point from the irradiation start time point, and

in another irradiation time longer than the irradiation time, the power of laser beam is set to the reference power until the termination time from the irradiation start time point.

14. The optical recording method according to claim 10, wherein

the laser beam is irradiated at a power larger than the reference power in each stage where the recording mark is formed so that a change of reflectance is less than 20% (0.2K) with respect to the initial optical reflectance of the optical recording medium of no-recording state.

15. An optical recording method, which irradiates an laser beam to an optical recording medium including a reflective layer and a recording layer, and forms a recording mark is formed on the recording layer so as to record information, comprising the following stages of:

continuously forming plural virtual recording cells, each of which has an arbitrary unit length and a unit width perpendicular to the unit length in a relative moving direction to the laser beam, in the relative moving direction, with respect to the recording layer,

setting five stages or more irradiation times with respect to the virtual recording cell so that the irradiation time becomes long successively from the first to final stages,

setting a reference time shorter than the final stage irradiation,

controlling the laser beam so that it is irradiated in all range at a power larger than a reference power in an irradiation time shorter than the reference time of the plural stage irradiation times, and is irradiated at a power larger than a reference power in an irradiation time longer than the reference time until the reference time elapsed from the irradiation start time point, and further, is irradiated at the reference power

after the reference time elapsed,

setting a power average value of the laser beam so as to become large in a manner that when the laser beam irradiation time is short, the irradiation time at the reference power after the reference time elapsed decreases, and a ratio of the irradiation time at the larger power increases.

16. The optical recording method according to claim 14, wherein the recording layer contains an organic dye, and is applied in the case of recording information in the recording layer.